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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,141	11/30/2005	Norimasa Fujimoto	5703-000013/US/NP	9542

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EXAMINER	
GAMI, TEJAL	
ART UNIT	PAPER NUMBER
2121	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/559,141	FUJIMOTO ET AL.	
	Examiner	Art Unit	
	TEJAL J. GAMI	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-10,12,41,42 and 44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-10,12,41,42 and 44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is responsive to a REQUEST FOR CONTINUED EXAMINATION entered May 11, 2009 for the patent application 10/559141.

Status of Claims

2. Claims 7-12, 41, 42, and 44 were rejected and claims 1-6, 17-24, 26-28, 30-40 and 43 were withdrawn in the last Office Action dated December 9, 2008. As a response to the December 9, 2008 office action, Applicant has Amended claims 7-10; and Cancelled claims 1-6, 11, 17-24, 26-28, 30-40 and 43.

Claims 7-10, 12, 41, 42, and 44 are now presented for examination in this office action.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 7-12, 41, 42, and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by McWilliams (U.S. Publication Number: 2004/0233521).

As to independent claim 7, McWilliams discloses an automatic introduction apparatus (e.g., automatic telescope 10) (see Paragraph [0022]) for automatically introducing a target celestial object (e.g., star or other celestial object) (see Paragraph [0022]) by controlling a rotation of an astronomical telescope around at least two axes (e.g., altitude angle and azimuth angle) (see Paragraph [0024]), said apparatus comprising:

an image-capturing means (e.g., image from the vision device; snap-shot) (see Paragraph [0027] and [0038]) which is adapted to capture an image of a celestial object at a plurality of focal distances (e.g., automatic focus and automatic zoom) (see Paragraph [0023]);

a celestial object database (e.g., database 22) (see Abstract); and

a celestial object identification means for identifying celestial objects each of which images has been captured by said image-capturing means (e.g., identified by processor 24) (see Paragraph [0032]), by comparing said images of celestial objects captured by said image-capturing means with a set of celestial object information in said celestial object database (e.g., compares with database 22) (see Paragraph [0045]), wherein said automatic introduction apparatus is configured to perform an alignment process (e.g., processor 24 instructs the drive mechanism to align) (see Paragraph [0046]) for defining a set of coordinate transformation information of a coordinate system in said astronomical telescope relative to a celestial coordinate system (e.g., drive mechanism 18 may scan the sky by varying the altitude angle, the azimuth angle,

or both) (see Paragraph [0041]) comprises an automated routine (e.g., program; logical functions) (see Paragraph [0044]) including:

a) capturing an image of celestial objects by said image-capturing means (e.g., scan sky, center star, compare signal) (see Figure 4);

b) identifying a celestial object in said celestial object image (e.g., recognize star) (see Figure 4);

c) correcting said coordinate transformation information based on the position information of said identified celestial object (e.g., calculate location) (see Figure 4); and

d) controlling a rotation of said astronomical telescope (e.g., drive mechanism 18 may scan the sky by varying the altitude angle, the azimuth angle, or both) (see Paragraph [0041]) so that said celestial object is introduced into a center of field in the capture image (e.g., center star) (see Figure 5), wherein said automated routine (e.g., program; logical functions) (see Paragraph [0044]) is repeated (e.g., functions noted in the various blocks may occur in any order or concurrently) (see Paragraph [0044] referring to Figures 4 and 5), using a focal distance (e.g., align tube; automatic focus and/or zooming; magnifying) (see Figure 5; and Paragraph [0023] and [0007]) of said image-capturing means that is shifted to a focal distance for a more telescopic side (e.g., the processor 24 may use the vision signal to fine tune the drive mechanism 18 in order to substantially center the specified star within the tube's 12 field of view) (see Paragraph [0043] and [0046]; and Figure 5), until the celestial object is introduced into a center of field in the captured image with a sufficient precision (e.g., center star) (see Figure 5).

As to independent claim 10, McWilliams discloses an automatic introduction apparatus (e.g., automatic telescope 10) (see Paragraph [0022]) configured to perform a process for automatically introducing a target celestial object (e.g., star or other celestial object) (see Paragraph [0022]) by controlling a rotation of an astronomical telescope around at least two axes (e.g., altitude angle and azimuth angle) (see Paragraph [0024]), said apparatus comprising:

an image-capturing means (e.g., image from the vision device; snap-shot) (see Paragraph [0027] and [0038]) which is adapted to capture an image of a celestial object at a plurality of focal distances (e.g., automatic focus and automatic zoom) (see Paragraph [0023]);

a celestial object database (e.g., database 22) (see Abstract); and

a celestial object identification means for identifying celestial objects each of which images has been captured by said image-capturing means (e.g., identified by processor 24) (see Paragraph [0032]), by comparing said images of celestial objects captured by said image-capturing means with a set of celestial object information in said celestial object database (e.g., compares with database 22) (see Paragraph [0045]), said automatically introducing process comprises an automated routine (e.g., program; logical functions) (see Paragraph [0044]) including:

a) capturing an image of celestial objects by said image-capturing means (e.g., scan sky, center star, compare signal) (see Figure 4);

b) identifying a celestial object in said celestial object image (e.g., recognize star) (see Figure 4); and

c) controlling said astronomical telescope to rotate (e.g., drive mechanism 18 may scan the sky by varying the altitude angle, the azimuth angle, or both) (see Paragraph [0041]) so that said target celestial object is introduced into a center of field in the captured image (e.g., center star) (see Figure 5) based on the set of position information for said identified celestial object (e.g., calculate location) (see Figure 4), wherein said automated routine (e.g., program; logical functions) (see Paragraph [0044]) is repeated (e.g., functions noted in the various blocks may occur in any order or concurrently) (see Paragraph [0044] referring to Figures 4 and 5), using a focal distance (e.g., align tube; automatic focus and/or zooming; magnifying) (see Figure 5; and Paragraph [0023] and [0007]) of said image-capturing means that is shifted to a focal distance for a more telescopic side (e.g., the processor 24 may use the vision signal to fine tune the drive mechanism 18 in order to substantially center the specified star within the tube's 12 field of view) (see Paragraph [0043] and [0046]; and Figure 5), until said target celestial object is introduced into the center of a field in the capture image with a sufficient precision (e.g., center star) (see Figure 5).

As to dependent claim 8, McWilliams teaches an automatic introduction apparatus in accordance with claim 7 (e.g., automatic telescope 10) (see Paragraph [0022]), wherein an area of the current sky in which a field of view is not blocked is selected as a candidate area in which to capture the image by said image-capturing means in said step a (e.g., scan the sky until the vision device senses the first bright star) (see Paragraph [0011]), before said routine is performed (e.g., program; logical functions) (see Paragraph [0044]).

As to dependent claim 9, McWilliams teaches an automatic introduction apparatus in accordance with claim 8 (e.g., automatic telescope 10) (see Paragraph [0022]), in which said alignment process is executed by repeating said routine for each of at least two celestial objects (e.g., alignment with a first bright star to a second bright star) (see Abstract).

As to dependent claim 12, McWilliams teaches an automatic introduction apparatus in accordance with claim 10 (e.g., automatic telescope 10) (see Paragraph [0022]), in which said celestial object identification means has a function to extract an area including a celestial object that has not been image-captured based on said celestial object images captured by said image-capturing means and to determine whether said target celestial object exists in said area (e.g., identified by processor 24) (see Paragraph [0032]).

As to dependent claim 41, McWilliams teaches an automatic introduction apparatus in accordance with claim 7 (e.g., automatic telescope 10) (see Paragraph [0022]), in which said celestial object database is renewed based on a set of celestial object information obtained (e.g., stored in database 22) (see Paragraph [0045]) via an electric communication means (e.g., communicate) (see Paragraph [0037]).

As to dependent claim 42, McWilliams teaches an automatic introduction apparatus in accordance with claim 7 (e.g., automatic telescope 10) (see Paragraph [0022]), in which an initial parameter for said alignment process is established automatically based on a set of position information of celestial objects identified by said

celestial object identification means (e.g., initializes the telescope 10) (see Paragraph [0045] and [0046]).

As to dependent claim 44, McWilliams teaches an automatic introduction apparatus in accordance with claim 10 (e.g., automatic telescope 10) (see Paragraph [0022]), in which said celestial object database is renewed based on a set of celestial object information obtained (e.g., stored in database 22) (see Paragraph [0045]) via an electric communication means (e.g., communicate) (see Paragraph [0037]).

Response to Arguments

5. Applicant's amendment and arguments filed May 11, 2009 have been fully considered. The amendment does not overcome the original art rejection and the arguments are not persuasive. The following are the Examiner's observations in regard thereto.

Applicant Argues:

In contrast, McWilliams discloses its alignment process in paragraph [0045] referring to Fig. 4, which is quite different. In McWilliams, a first bright star, a second bright star and another bright star are detected in order to derive comparable angles for recognizing the stars. See, paragraph [0045]. Thus, the McWilliams alignment process includes no automatic routine that is repeated for a particular celestial object, using a focal distance of said image-capturing means that is shifted to a focal distance for a more telescopic side, until that celestial object is introduced into a center of field in the captured image with a sufficient precision. In fact, the alignment process of McWilliams does not involve repeatedly capturing an image of a single celestial object, much less recapturing an image of the same celestial object at a shifted focal length as recited in the instant claims.

Examiner Responds:

Examiner is not persuaded. See office action above, where the prior art clearly teaches a routine that introduces a celestial object into the center of field. Examiner agrees that the prior art also processes angles to determine orientation. However, in the process of

doing so, the prior art repeatedly captures an image of a single celestial object (e.g., center star, calculate location, align tube, center star, correct location) (see Figures 4 and 5).

Applicant Argues:

Thus, even if the vision device 30 of McWilliams has an auto zooming function, it would not have been obvious to those skilled in the art to repeat the steps of the alignment process for the same reference star with the focal distance of the vision device 30 being increased.

Examiner Responds:

Examiner is not persuaded. The prior art clearly teaches repeating the steps of the alignment process for the same reference star (e.g., functions noted in the various blocks may occur in any order or concurrently) (see Paragraph [0044] referring to Figures 4 and 5) with the focal distance of the vision device 30 being increased (e.g., align tube; automatic focus and/or zooming; magnifying) (see Figure 5; and Paragraph [0023] and [0007]).

Applicant Argues:

In fact, nowhere in McWilliams is there any suggestion as to how a zooming function of the tube 12 or the vision device 30 is used in as part of any automated routine, or how any automated zooming function provide a step-by-step shifting of the focal distance for a more telescopic side during each repetition of an automated routine.

Examiner Responds:

Examiner is not persuaded. The prior art clearly teaches automated routine (e.g., program; logical functions) (see Paragraph [0044]) is repeated (e.g., functions noted in the various blocks may occur in any order or concurrently) (see Paragraph [0044] referring to Figures 4 and 5), using a focal distance (e.g., align tube; automatic focus

and/or zooming; magnifying) (see Figure 5; and Paragraph [0023] and [0007]) of said image-capturing means that is shifted to a focal distance for a more telescopic side (e.g., the processor 24 may use the vision signal to fine tune the drive mechanism 18 in order to substantially center the specified star within the tube's 12 field of view) (see Paragraph [0043] and [0046]; and Figure 5), until said target celestial object is introduced into the center of a field in the capture image with a sufficient precision (e.g., center star) (see Figure 5).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Taylor (U.S. Patent Number: 3,015,249) teaches tracking system.

Hedrick et al. (U.S. Patent Number: 6,369,942) teaches auto-alignment tracking telescope mount.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tejal J. Gami whose telephone number is (571) 270-1035. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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